

REMARKS

This is a response to the Office Action dated April 22, 2005 in this application. As a preliminary matter, applicants wish to thank the Examiner for withdrawal of the restriction requirement. Thus, claims 1-19 are pending in the present application. Individual issues raised in the Office Action are addressed next.

Specification

In paragraph 5 of the Office Action, the Brief Description of the Drawings section was objected to for failure to provide description of Figs. 5A, 5B and 5C; and the Abstract of the Disclosure was objected to as being in the improper form. In response, the Brief Description of the Drawings section has been amended to recite Figs. 5A, 5B and 5C; and a substitute Abstract have been provided. The substitute Abstract is believed to be in the proper form. Accordingly, withdrawal of the above objections is respectfully requested.

Claim Rejections Under 35 U.S.C. § 102

In paragraphs 6-7, claim 12 was rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,876,804 to Chen et al. (the Chen patent). Applicants respectfully traverse.

In particular, the Chen patent discloses a method of manufacturing an optical fiber, which reduces PMD by endowing a clockwise or counterclockwise spin to a drawn optical fiber. See, e.g., the Abstract of the Chen patent. Chen however fails to disclose the process of obtaining distribution pattern data from scattered light naturally generated from the spin imparted on the optical fiber, and the step of controlling rate and period of the spin on the basis of the obtained dispersion pattern data, as recited in claim 12 of the present application.

In contrast to the Examiner's assertion, column 2, lines 60-62 and column 6, lines 4-40 of the Chen patent do not disclose any method for obtaining a distribution pattern from scattered light. In fact, Chen only discloses the period and spin repeat distance required for reducing PMD of an optical fiber (see column 2, lines 60-62) and a spin-imparting assembly for realizing such a spin repeat distance (see column 6, lines 4-40).

In addition, the spin repeat distance in the Chen patent is completely different from the dispersion pattern of the present application. Chen defines the spin repeat distance as a distance required to alternate the direction of the spin back and forth, while the dispersion

pattern of the present invention means a trace of the spin itself that is formed on the optical fiber regardless of direction change of the spin as shown in Figs. 5A and 5C. That is to say, the dispersion pattern of the present invention includes not only a pattern whose direction is changed clockwise or counterclockwise but also a pattern imparted only in one direction and irregular patterns.

Thus, the Chen patent does not disclose, teach or even suggest the dispersion pattern of the present invention, and particularly a technique for obtaining a dispersion pattern data from scattered light naturally generated from the imparted spin, as disclosed in claim 12. Accordingly, the Chen patent does not anticipate claim 12 of the present application.

Claim Rejections Under 35 U.S.C. § 103

In paragraphs 8-10, claim 1-3 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Chen patent in view of Japanese Patent 05024878 to Seto et al. (the Seto patent). Applicants respectfully traverse.

As a preliminary matter, applicants respectfully submit that all claims of the present application are commonly owned by the inventors.

Next, with respect to the rejection of claims 1-3, applicants respectfully submit that either individually or in combination the prior art of record does not render claims 1-3 obvious because the prior art does not disclose all limitations of the rejected claims and cannot be successfully combined without the use of impermissible hindsight.

In the rejection of claim 1, the Office Action states that it is apparent to those skilled in the art to apply camera disclosed in the Seto patent to the assembly of Chen so as to give better fiber image. Applicants respectfully disagree.

The Seto patent is related to an image fiber, not to an optical fiber for information transmission as in the present application. The image fiber is manufactured by drawing a fiber preform in which a plurality of core/clad strands are arranged and filled in a quartz glass tube in parallel to each other. Seto discloses a method for observing twist of optical fiber strands by photographing bubbles of the optical fiber with the use of a camera (5) mounted on an optical fiber wound around a front end of the fiber (3), especially the reel (4), drawn from the fiber preform (1). In addition, in the reel (4), the twist is not intentionally applied like the present invention, but generated since the plurality of optical fiber strands filled in the fiber preform are not fixed in a circumstantial direction. Thus, the method of Seto is not used to

photographing a dispersion pattern from scattered light naturally generated from an optical fiber like the camera of the present application. Thus, though the camera of Seto is mountable to the assembly of Chen, it would be impossible to photograph scattered light generated by the spin imparted on the optical fiber. Accordingly, the combined teaching of Seto and Chen does not render claim 1 of the present application obvious.

Next, claim 2 of the present application recites that monitoring of dispersion pattern is targeted for a bare optical fiber which is not yet coated with polymer. Seto, however, teaches photographing an optical fiber being wound around the reel (4) as shown in Fig. 1. Generally, the optical fiber is coated with polymer before being wound around the reel. Thus, it would be understood that in the Seto patent the camera photographs a coated optical fiber, not a naked fiber as recited in claim 2 of the present application. In other words, an optical fiber in Seto and that recited in claim 2 are in completely different states. Therefore, claim 2 is not obvious in view of combination of Seto and Chen.

Lastly, claim 3 of the present application recites monitoring of dispersion pattern is targeted for an optical fiber which is in a state between a preform heating process and an optical fiber cooling process. Seto however discloses photographing of an optical fiber wound around the reel (4) as shown in Fig. 1 and discussed above. In other words, an optical fiber in Seto and that recited in claim 3 are in completely different states. Therefore, claim 3 is not obvious in view of combination of Seto and Chen.

At least for the above reasons, claims 1-3 of the present application are patentable over the prior art of record.

Allowable Subject Matter

In paragraph 11 of the Office Action, claims 4-11 and 13-19 were objected to as being dependent upon rejected base claim, but allowable if rewritten in independent form. Applicants wish to thank the Examiner for this finding, but submit that based on the above discussion, the pending independent claims are believed to be patentable over the prior art of record.

Conclusion

In view of the above, applicants respectfully submit that the present application is in condition for allowance. A favorable disposition to that effect is respectfully requested. Should the Examiner have any questions or comments concerning this submission, she is invited to call the undersigned at the phone number listed below.

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Respectfully submitted,



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